Nutrition & Autism

Autistic spectrum disorders (ASD) are thought to affect 1 in 50 and are typically observed during early childhood. ASDs are characterized by key deficits in social-communication and behaviour often presenting also with comorbid behaviours including hyperactivity, irritability and sensory deficits. In some cases language and overall cognitive ability are affected. Vitamin B6 and Magnesium have been popular treatment interventions for autism over the past 2 decades. However, shortcomings in the small number of published studies to date each with small sample sizes and some methodological issues mean that meta-analytic reviews testing safety and efficacy are not yet possible.

According to the Behavioural, Health and Nutrition Academy, around 90% of children with ASD are considered to be fussy eaters who may prefer just a few food types linked to specific flavours e.g.,"salty" or "sweet". It is not uncommon, that children with ASD may only eat one type of food, in a specific place and with a specific cup, bowl or spoon. These behaviours can be restrictive and repetitive and cause great frustration for parents and caregivers. Some children with ASD will have food fads related to textures or refuse foods based on how they look or smell. They may also not feel the sensation of hunger and may have difficulties comprehending mealtime expectations and structure. These dietary limitations may result in vitamin and mineral deficiencies and often supplements are recommended.

Maternal nutrition

Folic acid

There is a body of evidence suggesting that supplementation with folic acid prior to and during early stages of pregnancy may be associated with reduced incidences of autistic spectrum disorders. Conclusions between different studies however are inconsistent; other studies suggest that folic acid supplementation could be associated with higher incidences of autism. The evidence supporting this hypothesis is not strong and has been heavily criticised. Much of the research indicates that mothers who have higher intakes of folic acid, reduce the risk of their child having ASD. The effect of folate supplementation on clinical symptoms is yet to be confirmed and requires further research.

Fat intake

It has also been suggested that maternal fat intake is associated with risk of ASD in children. This area has not been widely researched but one study suggests that variations in polyunsaturated fat intake could affect the development of the foetal brain and thus affect the risk of ASD. The results suggested that high intakes of omega 6 could reduce the risk of ASD and low intakes of omega 3 could increase the risk. Further studies with larger sample sizes and more detailed dietary information would be required to confirm this association.

Nutrition in ASD

Various studies have looked into how diet is affected in individuals with autism. Often individuals have very restricted diets and therefore ensuring that they receive adequate nutrition is of great importance. There is a call for individual nutritional assessments for all children with ASD in order that food fortification and dietary supplements can be provided where adequate nutrition is lacking.

Iron

Some research suggests that there is an increased risk of autism spectrum disorders among those with iron deficient anaemia. The investigators emphasise that this finding may be a reciprocal effect in that children with autism may have iron-deficient diets. These findings suggest that intake of iron should be assessed in children with neurodevelopmental disorders such as autism.

Magnesium and vitamin B

The potential efficacy of magnesium and B vitamins as treatment for autism has been researched by many scientific teams. Although there is not enough data to support the claim that magnesium and Vitamin B can be utilised as a treatment for autism, there has been data confirming that mothers of children with autism reported improvements in sleep and gastrointestinal symptoms within their children after supplementation.

Antioxidants (Vitamin A, C, E, and beta-carotene)

It has been documented that children with autistic spectrum disorders report low levels of blood antioxidant enzymes, and it is suggested that these low levels of anti-oxidants may play a part in the behavioural components of autism. Researchers have found that there is a decrease in problematic behaviours and sensory motor scores when increasing vitamin C levels in children with autism. Vitamin C also plays an important role in metabolism and enhances production of the neurotransmitters dopamine and serotonin.

Omega 3

There has been a small amount of research into whether omega 3 supplementation can have a positive effect on some of the symptoms displayed by individuals with ASD. There have been two small randomised control trials that have shown a small non-significant effect. There is need for much larger and longer trials in order that there is stronger evidence. Thus far the evidence does not show that this dietary intervention can have an effect however there is sufficient evidence to warrant further investigation.

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